LIBRARY OF THE MEDICAL DEPT.,
UNIVERSITY OF MICHIGAN,
ANN ARBOR, MICH.

THE RHODE ISLAND MEDICAL JOURNAL

FEB 11 1918.
UNIV. OF MICH.

Owned and Published by the Rhode Island Medical Society. Issued Monthly

VOLUME II
NUMBER 2
Whole No. 116
PROVIDENCE, R. I., FEBRUARY, 1918
PER YEAR $2.00
SINGLE COPY 25 CENTS

CONTENTS

ORIGINAL ARTICLES

Poliomyelitis, Anterior, Pathology, Symptoms, Indications and Treatment. William Benham Snow, M.D. . . 17
The Value of Speech-reading. Marion A. Durfee . . . 26

EDITORIALS

R. I. P. 28
The New Appointee 29
Lessons of the Halifax Disaster 29
The Laboratory in War 30

SOCIETIES

Rhode Island Medical Society 31
Providence Medical Association 31
Washington County Medical Society 33

HOSPITALS

Rhode Island Hospital 34
Providence City Hospital 34
St. Joseph's Hospital 34

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT PROVIDENCE, R. I., UNDER ACT OF MARCH 3, 1879

H. P. HOOD & SONS
GUARANTEED AT LEAST 4.00% FAT
GRADE A MILK
Monday
Perfectly Pasteurized at 145° F. for 30 Minutes
LESS THAN 10,000 BACTERIA PER C.C.

For the Invalid, the Infant and those who are ill we suggest that the doctor prescribe

Hood's Grade A Milk

High in Quality, Low in Price

H. P. HOOD & SONS
Dairy Experts

HOPE OPTICAL CO.

Wholesalers and Jobbers

334 WESTMINSTER ST. PROVIDENCE · R.I.

A Word about our ℞ Service

A fully equipped and well manned shop in charge of expert workmen; a complete stock and excellent distribution facilities enable us to offer you unexcelled service. An efficient system of inspection insures a quality of work that cannot be beaten.

Your practice is bound to benefit if you send your prescription to a shop that fills them accurately, promptly and without substitution.

Why take chances when perfect service costs no more than the other kind?

Give us a chance to show you how it goes.

Yours very truly

HOPE OPTICAL COMPANY

Narragansett Hotel

Leading Hotel in Providence

Headquarters for all

Professional and Business Men

Cool Spacious Dining Room

Reasonable a la Carte Prices

Doctors are Needed in Midwinter

perhaps more than at other times.

To be ready to respond they must keep physically fit.

To keep physically fit, they must eat substantials, such as we serve.

Alongside City Hall
Providence

Rathskeller

THE RHODE ISLAND MEDICAL JOURNAL

The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

VOLUME II
NUMBER 2
Whole No. 116

PROVIDENCE, R. I., FEBRUARY, 1918

PER YEAR $2.00
SINGLE COPY, 25 CENTS

ORIGINAL ARTICLES

POLIOMYELITIS, ANTERIOR, PATHOLOGY, SYMPTOMS, INDICATIONS AND TREATMENT.*

By WILLIAM BENHAM SNOW, M. D.,
New York, N. Y.

Poliomyelitis, a disease usually occurring in epidemics, is characterized in most cases by paralysis, chiefly referable to an involvement of the spinal cord and meninges. Recent investigations have demonstrated it to be infectious, in character, of varying intensity, not in all cases causing paralysis, and sometimes manifesting congestions of the mucous membranes of the nose and fauces, with involvement of the gastro-intestinal tract. The identity of the particular germ of the disease and its origin and method of transmission are still unsettled questions.

The Flexner School seems ready to contend that it must always be originated from one infected. While it is conceded that it may be transmitted from individual to individual, there is abundant evidence that there are other sources from which the condition originates. A personal study of the disease and its origin for the past eighteen years has demonstrated that isolated cases do occur with ample evidence that the disease had not been transmitted from another human being infected. Exposure of children to damp earth in isolated communities indicate its source from such origin. An isolated case occurred from a child playing in a shaded spot on the beach at Cape Cod, another playing on a Long Island beach, another playing in the soil of the Catskill Mts., and two boys playing in an isolated pond in the town of Red Hook, and still another from playing during a humid period in a city garden, when there was no epidemic in any of these cases. Numerous other cases could be cited but these will illustrate what is meant to be conveyed. It seems that damp shaded places offer sources of infection for the malady. It will be observed furthermore that the epidemic of 1916 occurred following and during summers of unusual dampness and humidity. It was observed also, that during that epidemic, when a period of cessation from rain for several days occurred, there was a reduction in the number of new cases, the number of new cases again increasing when the weather changed again to rain and humidity.

Two things were observed in the recent epidemic of New York: First as to the class affected. It will be observed from Table 1 that the largest percentage of children affected were of foreign birth, persons living under bad surroundings and in sections of the city having less favorable hygienic conditions. Furthermore, of the other cases a large number of them were born of foreign parents residing in the city. While this fact must be conceded from the statistics it is not in accord with a statement made in the Public Health Bulletin No. 44 issued by the Treasury Department in 1912, in which it was stated that "poverty and unsanitary conditions of life seem to have little if any influence in determining infection. All classes are affected in about equal proportions." The epidemic in New York seems to contradict these observations though as a matter of fact many cases did occur among the better classes, though they were comparatively few.

TABLE 1

FROM THE NEW YORK BOARD OF HEALTH REPORT

Born in the United States	3,825
Foreign born	5,180

*Read before the Rhode Island Medical Society, December 6, 1917

TABLE 2
SHOWING MILD DEGREE OF SUSCEPTIBILITY
(From New York Board of Health Report)

Number of Cases	Number of Children Residing at Home								
	1	2	3	4	5	6	7	8	
1 Case in family	989	1,200	951	645	376	210	113	44	
2 Cases in family	...	108	73	50	30	18	6	5	36 over 8 years 61 adults
3 Cases in family	...	.....	8	4	2	2	1	..	7 over 8 years 2 adults
4 Cases in family	...	.....	...	1	1	...	..	..	
5 Cases in family	...	.....	..	...	1	...	...	1	

As to the contagiousness of the disease, the accompanying table seems to show conclusively that while mildly contagious it is not to be compared in this particular with the contagious character of the exanthematous diseases.

It will be observed that in a very large number of cases where there were two or more children in a family, but one was affected and in but very few cases more than one case occurred even in large families. This has been observed in most instances from the histories of cases taken by the writer.

The management of cases during the epidemic in New York was painful. Removing children from their homes and isolating them with as great care as cases of small pox. They were taken away from their homes and under a management largely experimental employing methods to which may have been due much of the fatality. The attitude of those in authority during this epidemic, was deprecated by those who were able to employ physical methods, and did in isolated cases with success; often in the most serious cases.

I regret to feel called upon to make this observation, but the painful conditions arising and seeming negligence in cases which came later under observation, and familarity with the course pursued, lead to the above criticism.

While it is conceded that the diease is transmissible from individual to individual, it is entirely possible to isolate these cases in a room in the home, as of cases of scarlatina or diphtheria, and allow them to remain in their own homes where physical methods of treatment could be administered, as radiant light in many cases instead of the less successful course so often pursued. In our judgment the indications for removals should be only in cases of poverty or where facilities or administering light and other physical measures were not installed—rather for treatment than quarantine. It is to be hoped that in another epidemic a more conservative management will be instituted and that a more rational regime may be adopted in the management of these cases.

The following table will show that a relatively low percentage of deaths occurred in this generally considered (see Table 3) serious epidemic compared with the population of New York. It would have been equivalent to one or two cases in a town of 1,000 people, and yet as much consternation was created over this epidemic as if typhoid fever had been present with a large number of cases.

TABLE 3
POLIOMYELITIS—CASES AND DEATHS
Rate per 1,000 Estimated Population, City of New York at Different Ages

	Cases	Deaths	Case Fatality
Total, all ages	8,914	2,406	
Rate per 1,000 population	3.80	1.03	26.99
Under 1 year	982	423	
Rate per 1,000 population	18.40	7.93	43.08
1 to 2 years	1,775	521	
Rate per 1,000 population	34.24	10.04	29.35
Total under 5 years	7,056	1,897	
Rate per 1,000 population	28.86	7.60	26.89
Total under 10 years	8,488	2,274	
Rate per 1,000 population	18.20	4.88	26.79
Total, 10 years and over	426	132	
Rate per 1,000 population	.23	.07	30.99

Pathology: "In a study of acute poliomyelitis," of the Rockefeller Institute, by Drs. Peabody, Draper and Dochez, the following pathological findings are reported:

"At autopsy the meninges are usually found to be somewhat edematous and injected. There is little increase of cerebro-spinal fluid. The brain and cord, on section, have a moist, translucent, edematous appearance, and the gray matter of the cord is often swollen so that it projects above the level of the white matter. It is darker than normally in color and is typically of a grayish pink hue. Not infrequently minute hemorrhages can be distinguished in the gray or white matter.

"The exact path by which the virus enters the body is at present not definitely known, but there is clinical and experimental evidence which makes it seem probable that infection frequently

gains access from the upper respiratory tract. It has been shown, both anatomically and experimentally, that the upper nasal cavities are in direct communication with the meninges by means of the lymphatics which pass outward with the filaments of the olfactory nerve. The view that the virus may enter the body by means of those lymphatics and thus exert its first effect upon the meninges is strengthened by the anatomical findings. The earliest change which has been described in the nervous system is hyperemia and the collection of numbers of small mononuclear cells, probably lymphocytes, in the perivascular lymph spaces of the blood vessels of the leptomeninges. These lymphatic spaces surrounding the vessels are anatomically processes of the arachnoid spaces, and the lymph in them is in communication with the cerebro-spinal fluid. This first change, then, is an acute interstitial meningitis, which is not associated with fibrin formation or with exudate on the surface of the meninges. It is usually most marked on the anterior surface of the spinal cord, and especially in the anterior fissure, from which the larger vessels enter the cord; but smaller collections of cells are often found along the meningeal vessels which are situated over the lateral and posterior aspects of the cord. The blood supply of the cord is derived from the vessels of the meninges, and with the advance of the pathological process, this perivascular infiltration follows along the vessels as they enter the cord from the meninges. Thus the earliest change that is found in the cord itself, both in human beings and in the experimentally produced disease, is hyperemia and the collection of small round cells in the lymph spaces surrounding the vessels. This cellular exudate forms a sheath apparently completely surrounding the vessels for long stretches and in many places the cells are so numerous that they form thick collars which seem to press on the lumen, and thus exert a mechanical effect in obstructing the circulation. While the cellular exudate is in the outer part of the vessel wall, it is probable that there is often some effect, either toxic or mechanical, on the intimal lining of the vessels, for hemorrhages, minute or extensive, are frequent findings, and one of the prominent features of most cases is the extensive edema. These three factors, cellular exudate, hemorrhages, and edema, all of them dependent on vascular changes, may perhaps be regarded as the primary reaction of the nervous system to the virus of poliomyelitis. The effect produced on the nerve cells themselves are probably either dependent on these vascular disturbances or they may be due to a direct action of the virus. This superior importance of the vascular system in determining the nervous lesions has for a long time explained the fact that the cervical and lumbar enlargements of the cord are most affected, and that the anterior horns of the gray matter are more involved than the posterior horns of the white matter. These are, of course, the regions of the spinal cord to which the blood supply is most abundant. Moreover, the frequency with which lesions are asymmetrical probably depends on the irregularity with which the vessels supplying the cord are given off at different levels. It has been suggested that the process by means of which the vascular lesions affect the nerve cells may be essentially a mechanical one. It is quite impossible to exclude the fact that the virus may exert some directly toxic action on these cells, but in many ways, the clinical and anatomical pictures are readily explained by the presence of the circulatory disturbance and of the exudate. On such an hypothesis the damaging effects can be assumed to result in part from the direct pressure of the nerve cells of hemorrhages, edema and exudate. There is also the additional factor of anemia following the constriction of the blood vessels by the same mechanism. On account of this pressure and anemia, the nerve cells degenerate. If the hemorrhage and exudate are absorbed soon enough, the cells may recover their function. If, on the other hand, the anemia and pressure have been prolonged or excessive, the nerve cells go on to complete necrosis. Histological examination shows nerve cells in all stages of degeneration, from those with the slightest changes in their protoplasm to others of which only a granular detritus remains. A most striking picture is formed by the entrance of polymorphonuclear neurophages into the necrotic nerve cells. A single nerve cell may be invaded by a dozen of these phagocytes, and by means of the necrotic material is completely disposed of. In more severe lesions, one sees the hyperemia, the perivascular infiltration, hemorrhages, edema, and a diffuse cellular infiltration throughout the gray and white matter, but nerve cells may be

completely absent from the picture. These changes, most prominent in the anterior horns of the gray matter, are not sharply circumscribed, but are scattered more or less diffusely through both the gray and white matter of the cord.

"The same sequence of changes, vascular disturbance, and subsequent degeneration of the nervous elements, is found to a less degree in the brain, medulla and pons. Hyperemia and a moderate amount of cellular infiltration may be found in association with the vessels of the cerebrum and cerebellum, but lesions extensive enough to produce motor symptoms are exceedingly rare. The medulla and pons show some slight degree of involvement in most cases, and one frequently finds in them a marked cellular exudate and many hemorrhages. It is noteworthy, however, that it is often extremely difficult to reconcile the clinical symptoms, which are referable to pontine lesions, with the actual autopsy findings. Cases which have shown bulbar paralyses in life may fail to show adequate anatomical lesions to account for them, and other cases which have given clinical evidence of spinal involvement only may show changes through the pons and medulla.

"Of practically constant occurrence are the lesions in the posterior root ganglia. The histological changes are similar to those that take place in the cord itself. There is an infiltration of small round cells in the lymphatic spaces surrounding the vessels which enter the ganglia from the meninges. This has been shown experimentally to be the first step in the process. Then follows a more general, diffuse exudation of cells, degeneration and necrosis of the nerve cells, and finally the entrance of polymorphonuclear leucocytes into the necrotic cells and removal of the disintegrating cells by neurophages. The suggestion has been made that these lesions in the sensory ganglia may in part account for the pain which is such a constant feature of the acute stage of the disease. Another element in the production of pain is the cellular infiltration which is found along the nerve roots."

In the fatal cases, the rapidity with which the disease invades the system seems to account for the fact that little or no structural changes are observable. The regeneration of the parts affected with the return of the functions of the groups of muscles paralyzed in many instances points to the fact that pressure due to infiltration has been the real cause of the objective symptoms, and that when these have been relieved the parts affected gradually return to normal. These observations are borne out by autopsies held on patients who have died with the disease in the late epidemic.

The peculiar confining of the disease to the anterior portion of the spinal cord is found, and a distinct tendency seems to exist for the inflammatory changes to follow the anterior dural vessels of the brain and cord. The durameter may become much congested, with hemorrhages present, while in other cases they become tense and shiney, and an edematous condition of the piameter is found. When the edema is localized it is usually found in the cervical region, and it occurs in some cases throughout the entire length of the cord. Hemorrhagic conditions have been found at autopsy in cases involving the entire length of the cord. Such hemorrhage in poliomyelitis is not only confined to the anterior dural vessels, but also continues sometimes into the interior horn of the cord. This occurs in a large percentage of cases involving the cervical region.

Symptoms. Temperature: The most striking and common symptom in the onset of poliomyelitis is fever, though it will be observed that in some of the cases, even the fatal cases, fever seems to have been absent. There is a remarkable lack of relation between the temperature and the pulse rate. The following observation is made from a study of the cases in over 500 in which recovery took place in the recent epidemic. Two cardinal points were observed, as compared with fatal cases. In cases that recovered there was nothing to show that in the primary temperature of the infection there existed any fever connected directly with the disease; whereas in the cases in which death occurred the initial temperature continued on to exceptionally high points, falling just before death. There were cases that lasted not over three days, when in some cases the temperature reached 110° F. Some cases, however, terminated in twelve hours without any rise in temperature whatever.

Other variations in temperature were dependent upon conditions associated with individual cases. In cases with recovery the temperature returns to normal usually before the seventh

day. Occasionally a subnormal temperature will follow. It is observed, further, that the disease is not accompanied by fever other than a rise of temperature at the outset. A rise in temperature succeeds lumbar puncture and usually follows an injection of immune or normal serum. The most common cause for rises of temperature during the course of the disease are nasal, laryngeal and pharyngeal inflammation, otitis-media, bronchitis, pneumonia, gastro-enteritis or a combination of intervening infections. The temperature has been found to rise 5° F. after an injection of normal serum.

Pulse: At the outset of the temperature, we have an initial rise of pulse rate, the pulse beginning to fall at the same time that the temperature falls, but more rapidly in proportion. Seventy per cent. of the non-fatal cases tend to terminate by lysis on the seventh day. The average pulse rate in the fatal cases was about 130 up to the seventh day, when, if the child did not return to normal, it remained at approximately 120 to the fourteenth day, dropping to normal on the fourteenth day, or, in more severe cases, continuing at from 110 to 120 up to the twenty-first day. These rates were referable to cases five years of age or under.

Great irregularity of the pulse, however, exists throughout the disease, drops in pulse rate occurring frequently without warning. The lowest pulse rates were noted before the seventh and the twenty-first days. One of the simple diagnostic signs in the pulse rate of poliomyelitis is a continued rise of pulse without any corresponding rise of temperature. This may occur under conditions in which the patient seems otherwise to be in every particular doing well. The pulse may run from 120 to 130 and 140 or more and then suddenly drop, finally returning to normal. This disparity of the relation of pulse and temperature is one of the characteristic symptoms of poliomyelitis.

Respiration varies with the conditions, pulmonary and cardiac.

Restlessness seems to be one of the characteristic symptoms of the onset of the disease, with a degree of insomnia and extreme continued threshing about. This restlessness is as a rule due to pain.

Headache is often one of the symptoms of the onset of the disease, and may persist throughout the entire case, varying in degree from a simple frontal pain to an intense continuous agony. If localized it is confined usually to the frontal or occipital regions or it may be localized on the right side or left side of the head.

Pain and Hyperaesthesia: Before the paralysis extreme hyperaesthesia is often found and it may persist throughout the entire course, and may be either localized or general. When localized it is usually referred to the region of joints, over the spinal cord, or to the back of the neck. In fatal cases generalized hyperaesthesia is more frequent than the localized. Hyperaesthesia is not constant and cases may come to a fatal termination without the appearance of the symptom.

Pain coexisting with hyperaesthesia may be generalized or local, and the generalized is usually referred to the muscle structures of the body; whereas when localized it is referred frequently to the spine, usually on motion or pressure. These pains may be constant or only illicited on pressure or movement. This symptom of pain is the most troublesome and trying of any to the patient during the early stages of the disease, the child frequently crying out with agony.

Involvement of the Gastro-Intestinal Tract: Vomiting and enteric symptoms occur in some of the cases. Constipation occurs also, probably due to localized paralysis. Mucous discharges from the nose and throat is a prominent symptom in about 13 per cent. of the cases, and not of sufficient frequency to give it great significance. In bronchitis or laryngitis a croupy cough may occur associated with a congested condition of the larynx and pharnyx, which may later end in broncho pneumonia or pulmonary edema.

Eruptions occur in some cases, though it is not characteristic of the disease.

The reflexes may or may not be lost in varying degrees.

Tremor: Among the earliest symptoms recorded is muscle tremor, which varies very much with the intensity of the disease. It may be constant or intermittent. Marked muscular contractions are present in some cases and may involve the fingers, face, lips or any part of the body. In some instances contraction may develop into paralysis, the child developing convulsions, finally ending in coma and death. Convulsions may be either tonic or clonic. These symptoms may in some cases be the first symptoms of the onset, but they more often occur later in the disease. In many of the cases,

months after the onset of the disease, this condition of tonic spasm exists. It is one of the conditions that has been shown to be so remarkably relieved by applications of light and heat.

Paralysis: The recent epidemic has clearly demonstrated that there may be a severe infection with a fatal result unaccompanied by paralysis, and that spastic paralysis is common in poliomyelitis. In rapidly developing cases the infection has resulted in paralysis of the vital centers before muscle paralysis can set in, which is especially true of the bulbar type. It may be said, however, that in a large majority of cases paralysis does exist in some form. Spasticity of particular muscle groups may be manifest. The other symptoms enumerated are of less importance and not indicative of anything special, other than symptomatic treatment.

Indications: From the foregoing symptoms associated with the pathology of the condition the following indications present: (1) If possible, the destruction of the germ, which has been stated by Flexner to be very susceptible to radiant light. (2) The relief of the local spinal congestion either by derivation or other treatment. (3) The relief of bronchial accumulations and collections of fluid in the lungs in the extreme cases. (4) Stimulation of the weakened cardiac and respiratory centers. (5) The correction of gastro-intestinal disturbances. (6) The relief of pain and hyperaesthesia. (7) The relief of muscular spasm. (8) The maintenance of nutrition in paralyzed muscles during the periods of paralysis. (9) The treatment of the paralysis, which naturally includes the relief or removal of spinal effusions or congestion. (10) The prevention and correction of deformity. (11) The continuous observation and management of the case for years after the onset for the removal of paralytic conditions.

Treatment: In the treatment of infantile paralysis issue must be taken with the general observations of the neurologists and orthopedic surgeons who have expressed themselves violently against the employment of physical measures with which they are not familiar, such lack of familiarity being the only excuse for the attitude they have taken.

The measures which we shall consider of paramount value in the management of these cases are *radiant light and heat,* reflected from a properly constructed incandescent light apparatus. The ultra-violet rays play no special role in the treatment of these cases; whereas radiant light and heat projected from properly constructed incandescent light apparatus offers one of the most useful measures in the treatment of poliomyelitis.

Electricity: The static, high frequency, and sinusoidal currents, are employed according to the indication, stages of the disease or condition of the patient. Massages and mechanical vibration are gently applied to the affected muscles, together with exercise, active and passive. Intense efforts of the will of the patient are wisely applied to induce movement of parts paralyzed.

The experience or results of the past year in the uses of serums, with which the writer had no familiarity, except from a study of the records furnished, does not seem to warrant marked consideration.

Immunization is confessed to be impractical, as so small a part of the community show susceptibility to the infection as shown by the table, and though it may have proved successful in rabbits it has not seemed to be of sufficient value in the human subject to warrant its adoption. The employment of serum therapy after the onset of the disease seems futile, as the damage has already been done before the serum could be applied and as applied has proved of little value, as records show.

Prolonged hot baths in lieu of the opportunity to employ radiant light and heat is of undoubted value in all early cases for inducing derivation of the blood to the skin. The use of various laxatives and heart stimulants and other medication are indicated according to conditions.

The symptoms presenting in this affection point from the onset, first to the destruction of the germ. It has been stated by Flexner that the germ of poliomyelitis is especially susceptible to radiant light; and it has been demonstrated clinically in the hands of those who have employed it intelligently, that in nearly every case in which long application of radiant light and heat have been applied in the early stages of the disease, it brings prompt relief. Light penetrates the tissues from four to six inches. It is found to be of great value

in all severe cases, often being followed by prompt restoration of all the functions. To say that these cases would have terminated favorably otherwise is assumption; for the showing indicated that wherever light has been applied with long administrations to the whole body, and particularly over the spinal region, the benefit has been salutary and fatalities have not occurred. This measure was applied first by the writer in 1910 in the treatment of a child eight years of age in the family of a physican. This child was nearly moribund after the third day of the disease, presenting the following condition: Paralysis complete of all limbs and extremities, pulse feeble at 130, temperature moderate, moist rales throughout the lungs with marked rattling in the throat and inability to raise it. The child was conscious, but stupid. Radiant light and heat in this case was applied over the whole body of the patient from a high candle power incandescent lamp for fully one hour, when the surface of the body was generally hyperemic. This was followed by a twenty-minute application of the static wave current with a long spinal metal electrode over the spine. Three hours later the child awoke, having slept in the interim. The body was covered with beads of profuse perspiration and the clothing where in contact was wet from the same. The rales had disappeared entirely from the chest and the rattling from the throat. The child could move an arm and a shoulder. The pulse, owing to the loss of fluid, had increased to 160. The same treatment was repeated daily, and improvement began from this time with rapid progress of all the conditions to recovery. This result from the use of light led me to urge its use by the profession for the purpose of lessening the spinal congestion by derivation of the blood to the skin, which is capable of holding two-thirds of the blood of the body. The effect, thereby, is to relieve the congestion in the cord, as it removed the fluids from the lungs in that case.

Prior to this time no demonstration had been made of the susceptibility of the bacteria to light, though the results in this case and in numbers of cases, that have since been treated in this manner, seem to have established the possibility of such germicidal effect upon the bacterial process, as well as of relieving the spinal congestion.

Furthermore, the application of radiant light and heat very promptly relieves the pain and spastic contractures for these little sufferers. The employment of this method with our patient and in many other cases has demonstrated its great value when applied in the treatment of early cases of poliomyelitis. I am confident that a large percentage of the fatal cases would terminate otherwise if radiant light was administered from the outset.

It must be observed further that radiant light and heat applied to the surface in these cases plays not only the part of relaxing and relieving tension and the derivative effect upon congestion, but also stimulates to greater activity the deep spinal centers by the reflex stimulating effect of heat when applied to the peripheral nerves. This is an important matter to be taken into consideration in these critical cases,—in all cases, in fact, in which the pulse and respiration indicate failing powers of the vital centers.

The value of radiant light and heat in the treatment of chronic cases was well illustrated to the writer in the experiences that came under his observation in Ward 40 of Bellevue Hospital, where a large number of cases were placed. The little children, the aftermath of the New York epidemic, which were still under public treatment in the hospital, came under my observation last January at the request of Dr. Reginald Sayre. I immediately installed in the hospital a number of reflecting lamps and canopies for the treatment of the limbs and bodies of these little patients, which were otherwise constantly cold. I found them in various conditions in the wards, some able to move about in a crippled condition and others in bed, but all of them with cold legs and extremities. I urged the provision of warm woolen stockings, which were promptly forthcoming for these cases, and the daily use of radiant light and heat and more blankets, with other means of keeping their extremities warm during the intervals between treatments. This proved one of the greatest boons and aids in the management for the improvement of these cases, and is to be urged in the treatment of all cases of poliomyelitis. We

placed two children under a large canopy reflector with their whole bodies exposed to the light, and covered the canopy with blankets to retain the heat. Following this the sinusoidal current was administered for the exercise of the muscles. The light applied in this manner reduced the labor of massage more than half. In these chronic cases the sinusoidal current plays a most important part as a means of exercising the affected muscles. For this purpose I installed a sinusoidal apparatus in Bellevue Hospital. It should always be employed with a view to affecting the centers as well as the periphery, which is accomplished by placing one electrode over the corresponding spinal centers and the other to the affected parts—in this way linking together the centers and the neuromuscular mechanism. A slip-shod administration of the Constant and Faradic current, too often in vogue, applying the opposite poles to the ends of the muscles, without reference to the centers involved, is irrational. It is not only the exercise of the muscle that should be considered, but the centers where the lesion is. For this reason in the treatment of these cases, as well as of the acute cases, measures should always be employed to improve the metabolism of the cord, to increase the circulation and nutrition of the impaired cells, as well as freeing them from the pressure that is often persistent after the acute stage of the disease. That pressure and impaired metabolism do persist is demonstrated from the fact that in the writer's experience very many cases have responded with remarkable improvement following the application of the static wave current over the spinal centers. This has not only been demonstrated by the writer, but by numerous other observers who have verified his results. Dr. F. E. Peckham has reported cases of this sort in which the improvement was marked from the outset. I have observed cases which, after five months, with complete paralysis of both lower extremities, have made recovery within a few months with the use of the wave current, with very little impairment of the muscles persisting.

The static current in the treatment of poliomyelitis plays an important role during the acute stage, and should be applied during five or six weeks in the chronic stage. It is impossible for those who are not familiar with the *modus operandi* of the action of the static current in spinal conditions to appreciate its value, and unless clinicians will investigate and see for themselves, as the writer and many others have done, the remarkable effect upon the spinal centers from the administration of the static wave current, they may otherwise continue to doubt the truths demonstrated by others. This has too often been the status of the medical mind towards the employment of the static currents. Prior to the use of the static current in the treatment of poliomyelitis the writer had demonstrated its value in the treatment of other spinal conditions, particularly of locomotor ataxia. When we use it methodically in this condition the results are remarkable and the improvement beyond conception or acceptance with those who are unfamiliar with its effects.

In spastic paraplegia, traumatic injuries of the spine, transverse myelitis, pachymeningitis, and other types of congestive statis or sclerotic processes in the spinal cord its effects have been demonstrated in the writer's experience with good results, varying as a matter of fact with the extent, or degree of chronicity of the condition.

Results with other cord cases led the writer in 1900 to adopt it in the first case of poliomyelitis which was treated by this method, at the suggestion and in the presence of one of the best clinicians in New York. A young child 13 month of age with both legs and extremities completely paralyzed, after seven weeks' treatment in a neurological clinic, was so promptly relieved of the paralysis in both legs and extremities by the application of this current to the spine that the writer was convinced of its efficiency. So much so that two weeks later he advised that a case that was referred to him by a physician living in a distant town should be treated in the same manner, which was done and with the same result. These two cases mark in the writer's experience an epoch in the treatment of poliomyelitis. Having had the opportunity in recent years of managing many cases in all stages I have verified its efficiency.

It has been often stated as an old dictum

that electricity should never be used in the acute stage of any inflammation, particularly of diseases of the spinal cord, and the heresy has become ingrafted in the medical mind, particularly with most neurologists and orthopedists. The writer, first in 1900, called attention to the fact that in any acute condition that was not malignant, pyogenic, nor tuberculous, the earlier electricity could be employed for relieving the infiltration and exudation present the more promptly would recovery take place. This applies to all conditions of myalgia, sprains, synovitis, neuritis and similar conditions. The writer has never since seen occasion to reverse the dictum, neither have those who have followed the same course, and now it is not unreasonable to state that in the early stages of poliomyelitis within the first days, as it was employed in the cases referred to, the static wave current may be applied over the spinal column with the certain assurance that the local infiltration and exudations present in the piamater and substances of the cord will be gradually removed through the lymphatic channels by the mechanical action of the current, and the pressure will be thereby relieved. This statement is made in full consciousness of the fact that the old heresy still exists in the minds of most of the profession, and with the consciousness that the view expressed may be considered the heresy. However, now the older fallacy is well proved.

If radiant light and heat and the static wave current are employed in the early stages of poliomyelitis the mortality may be materially reduced and the resulting crippledom reduced to a minimum. This is a strong statement, but it is a time for strong statements to be made in the face of the error that is allowed to prevail. The failure of men to recognize or investigate as authorities and then to employ them as they would is regretted. The indifference of the profession to the use of electricity in the treatment of inflammatory conditions as of neuritis, synovitis, myalgia and sprains, for which these measures give immediate and permanent relief, when employed in the acute conditions, is an injustice to the afflicted.

In the chronic cases of poliomyelitis the cases that come under observation, when the conditions are in a *status quo,* the treatment for the first five or six weeks would properly include the employment of the static wave current to the spine, employing a long spark-gap with the wave current. In a child five years old if the upper and lower extremities are both involved, a spark-gap one foot in length is not too long, and in an older patient, two applications should be made with electrodes, taking one-half the spine each time with a spark-gap of a length essential to obtain satisfactory results. To those who are inclined to employ the current in a gingerly, gentle style the results will be less effective. The current in its passage in and out of the body is incapable of doing harm to the patient and unless employed with the requisite energy will not produce the desired effect in removing exudations and infiltration when present.

In my own experience the static wave current gives best results when employed in chronic cases in this manner on alternate days for four to six weeks, when the effect required will have been accomplished if the current is properly applied. Following and during the static treatment the sinusoidal current should be employed as previously stated with one electrode over the spinal centers involved, and the other applied to the motor points of the respective muscles, for mild exercise, given with a current strength that will produce gentle contractions when applied to the same motor point on the unaffected side. This will gradually restore the muscle movement in the parts if the centers are not too seriously involved. Furthermore, this method will stimulate a linking of the neuromuscular mechanism with their respective centers. Experience has taught the importance of working with gentle stimulation from the centers to the motor points of these paralyzed muscles that respond. It will often be possible to gradually restore the functions and motions to the parts, when treatment is persisted in for a long period. As years advance it has been shown that improvements may continue to take place even up to maturity, parts being restored in which recovery had seemed to be impossible. Such cases under persistent treatment might have been restored earlier.

I should have observed also that in the acute condition the use of radiant light and heat and

gentle massage will do very much to prevent the atrophy of the muscles if carried out from the onset; and, though it is the rule in poliomyelitis for atrophy to occur out of proposition to disuse, when radiant light and gentle massage are employed, and the extremities kept warm the effect will be beneficial, by maintaining circulation and metabolism and thereby lessen or prevent the atrophy which would otherwise certainly follow.

The use of the high frequency current was first suggested by the writer in a paper on epidemic poliomyelitis presented before the American Electrotherapeutic Association in 1912 and published in the October number of the Journal of Advanced Therapeutics for that year. This measure has been recently referred to in a paper by Dr. A. C. Geyser, and Dr. Frederic deKraft has also reported excellent results from its employment. With radiant light and heat, the static current, the high frequency current fluids are removed from the meninges of the cord by derivation and elimination. The infiltrating exudations which are causing pressure upon the nerve filaments are thus removed and when applied before these cells have been destroyed are often capable of completely restoring the function to the corresponding parts. The possibility of destroying the germs locally present in the cord, either by an increased local phagocytosis, with the hyperemia actively induced, or by direct destruction by the application of radiant light and heat, would seem to explain the prompt recovery of the patient so treated.

Another effect accomplished by the static wave current, radiant light and heat, and the high frequency current is the restoration of active circulation and metabolism in the parts affected. This is accomplished without in any way destroying or unfavorably disturbing the parts, as has been demonstrated in the treatment of traumatic injuries to the spine and in other deep-seated inflammatory conditions.

The results outlined have been so often obtained by many observers that there should no longer be objection or opposition to the employment of the physical methods of treatment; at least a careful investigation of their merit is due the suffering victims of the disease.

THE VALUE OF SPEECH-READING FOR THE ADULT DEAF.*

By Marion A. Durfee
Providence School of Lip Reading.

I am pleased to have the opportunity of coming before you this evening to acquaint you with the value of speech-reading for the adult deaf—a work which should be of interest to the medical profession, whose aim is to restore to usefulness and happiness those handicapped by their phyical conditions. The United States has been a trifle backward in realizing this great need; and I suppose lack of support for it from the medical profession is the main reason for its slowness of progress.

In the last two or three years we have heard more of lip-reading in this country than formerly. This is due in a great measure to American interest in the Great War, for lip-reading in Europe has played an important part in refitting the deafened soldier for social service. In modern warfare permanent deafness is commonly a result of injuries to the ear. From figures available to date it has been officially estimated that 2 per cent. of the permanently disabled are so deaf that they cannot return to their former occupations. The total number of permanently disabled in all the warring nations is given as 12,000,000, and 2 per cent. of this number shows that over one-quarter of a million men are disabled through deafness alone. As a result of reports which reach us of the work done in European countries in this line of human salvage there is greater interest here than ever before. But considering the number of persons in all walks of life who suffer from some form of deafness, there are comparatively few who know what lip-reading is, what it will do, and what it will not do.

The credit of the first successful system in speech reading dates back to the year 1570. Gradually other systems were evolved until the progress in speech-reading has so advanced that now thousands of deaf pupils leave their schools equipped with the blessings of the oral methods. But, you are familiar, no doubt, with methods now used to teach

*Read before the R. I. Ophthalmological and Otological Society, January 10, 1918.

speech to children who were deaf before they have acquired ideas and the words to carry them. In learning speech through voice culture for himself, he learns to understand speech through voice manifestations in others. The main aim of this system is to teach speech.

The idea of developing a method of lip-reading for persons who had acquired speech before they became deaf did not originate until Julius Müller-Walle in 1886 developed a method especially adapted for the adult. Herr Müller-Walle realized than an entirely new system must be evolved for those persons who had acquired speech without conscious thought, as voice culture. It was only this voice culture as shown by visible movements of the lips and tongue that interested him. Accordingly Herr Müller-Walle systematized the various vowels and consonants and the visible manifestations of them. With these once learned the rest is a matter of practice.

It goes almost without saying that the ability to read the lips is a valuable possession for the adult, whether he is wholly or partially deaf. If he is only partly deaf he may so coöperate his defective hearing with what he sees in such a way that no one will be conscious of his affliction, if he is totally deaf, lip-reading is his last resort to keep in touch with his fellow-men.

With the acquisition of the art of speech-reading, he will be benefited in three ways: First, in a social way in that he will be able to take an active part in conversation; secondly, in a mental way in that he will be relieved of the nervous strain which he is ordinarily under, and this mental relief will greatly help his physical condition; thirdly, it will help him in a business way through his ability to fill positions which otherwise would be impossible. The relative importance of these three benefits will, of course, differ somewhat in persons. Men, I think, will be helped mostly in a business way, but the great difference that it will make to them in a social way should not be underestimated. Women, it seems, will feel a great relief to be able to again take part in every day affairs; and this relief will greatly help their physical condition. But in all three ways will all be benefited to a greater or less degree.

Examples of the good which is derived from the study of lip-reading may be seen on every side, and reports of these are increasingly common. Reports come from Germany that during the month of February, 1915, several classes in lip-reading were organized among the returned soldiers in Hamburg. Eighty-three were enrolled in the 9th Army Corps; after about three months of study 49 of these were discharged, as they could read the lips well enough for ordinary use—20 could not return to their former occupation. Several of these pupils, as, for instance, a law student, resumed his work, a school teacher in charge of his class; an office manager at the head once more of a large law-office, were enabled by their proficiency to return to their former field of activity.

Dr. T. W. Wood of Columbia University estimates that there are one million children with defective hearing among school children of the United States. Many of these are so deaf that they are absent-minded and extremely nervous trying to hear the teacher when spoken to. In regard to this Miss Mary McCowen, Superintendent of Public Schools for the Deaf in Chicago, states: "If such children are recommended to the teacher of lip-reading as soon as their growing deafness is discovered they could easily remain in their classes and complete their education with the hearing children with no disadvantages."

HONOR ROLL.

Capt. Howard E. Blanchard, M. R. C., U. S. A.

Lieut. Caldarone, M. R. C., U. S. A.

Lieut. Leo Cohen, M. R. C., U. S. A.

Lieut. Patrick A. Durkin, M. R. C., U. S. A.

Capt. William H. Dyer, M. R. C., U. S. A.

Lieut. Charles F. Gormley, M. R. C., U. S. A.

Lieut. Philip C. Means, M. R. C., U. S. A.

Lieut. Antonio C. Ventrone, M. R. C., U. S. A.

THE RHODE ISLAND MEDICAL JOURNAL

Owned and Published by the Rhode Island Medical Society

Issued Monthly under the direction of the Publication Committee

ROLAND HAMMOND, M.D., *Editor*
249 Thayer Street, Providence, R. I.

J. F. HAWKINS, M.D.
Business Manager
114 Westminster Street
Providence, R. I.

ALEX M. BURGESS, M.D.
JOHN E. DONLEY, M.D.
J. W. LEECH, M.D.
F. T. ROGERS, M.D.
} *Associate Editors*

Committee on Publication: ROLAND HAMMOND, M.D., *Chairman*; J. F. HAWKINS, M.D.; W. A. RISK, M.D.; JOHN CHAMPLIN, M.D.; J. W. LEECH, M.D.

Editorial Correspondence, Books for Review and Exchanges should be addressed to the Editor; Advertising Correspondence to the Business Manager.

Advertising matter must be received by the 15th of the month preceding date of issue.

Advertising rates furnished upon application, to the business manager, J. F. Hawkins, M.D., 114 Westminster Street, Providence, R. I.

SUBSCRIPTION PRICE, $2.00 PER ANNUM. SINGLE COPIES, 25 CENTS.
Entered at Providence, R. I. Post Office as Second-class Matter.

RHODE ISLAND MEDICAL SOCIETY

Meets the first Thursday in September, December, March and June

JOHN CHAMPLIN	*President*	Westerly
GARDNER T. SWARTS	*1st Vice-President*	Providence
JOHN M. PETERS	*2d Vice-President*	Providence
JAMES W. LEECH	*Secretary*	Providence
W. A. RISK	*Treasurer*	Providence

DISTRICT SOCIETIES

KENT
Meets the second Thursday in each month

C. L. PHILLIPS	*President*	East Greenwich
L. J. A. LEGRIS	*Secretary*	Phenix

NEWPORT
Meets the third Thursday in each month

H. J. KNAPP	*President*	Newport
M. E. BALDWIN	*Secretary*	Newport

PAWTUCKET
Meets the third Thursday in each month excepting July and August

CHARLES H. HOLT	*President*	Pawtucket
EARL J. MATHEWSON	*Secretary*	Pawtucket

PROVIDENCE
Meets the first Monday in each month excepting July, August and September

FRANK E. BURDICK	*President*	Providence
CHARLES O. COOKE	*Secretary*	Providence

WASHINGTON
Meets the second Thursday in January, April, July and October

A. B. BRIGGS	*President*	Ashaway
W. A. HILLARD	*Secretary*	Westerly

WOONSOCKET
Meets the second Thursday in each month excepting July and August

W. W. BROWNE	*President*	Woonsocket
E. F. HAMLIN	*Secretary*	Slatersville

Section on Surgery—2d Wednesday in each month, Dr. F. G. Phillips, Chairman Dr. Peter P. Chase, Secretary and Treasurer.

Section on Diseases of Children—3d Tuesday in each month, Dr. Henry E. Utter, Chairman; Dr. J. S. Kelley, Secretary and Treasurer.

Section on Gynecology and Obstetrics—3d Wednesday in each month, Dr. C. W. Higgins, Chairman; Dr. E. S. Brackett, Secretary and Treasurer.

Section on Medicine—4th Tuesday in each month, Dr. D. Frank Gray, Chairman; Dr. C. W. Skelton, Secretary and Treasurer

R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President, Dr. Lewis B. Porter President; Dr. H. C. Messinger, Secretary.

NOTICE

The House of Delegates having voted that the dues shall be $10.00 for 1918, the Treasurer desires to call the members' attention to Article IV Sec. 6 of the By-Laws: "Every Fellow shall annually contribute the Annual dues and the same shall be due and payable to the Treasurer, January first of each year."

EDITORIALS

R. I. P.

The action of Governor Beeckman in refusing to reappoint Dr. William L. Harris to succeed himself as a member of the State Board of Health is a direct response to the wishes of the majority of the people who have sufficiently interested themselves to become acquainted with conditions existing in the Board. His appointment under a preceding administration was based more upon a sense of personal appreciation than upon a. y apparent or actual qualification for the important post of health administrator. At no

time during his term did Dr. Harris have the confidence of the best element in the medical profession, and nothing that he personally has done has served to inspire that confidence.

The feeling that the valuable work of the laboratory branch of the State Board of Health was being jeopardized by his activities has been the main inspiration of the concerted action of the medical profession against his reappointment—an action which has borne fruit and which promises a far better outlook for an orderly administration of health matters in Rhode Island than if the "stormy petrel" of the State Board of health had been returned.

That the opposition to Dr. Harris's reappointment was born solely of professional jealousy, as claimed by some of his proponents, is not only false, but proven false by the protests made by organizations of a totally different character.

It is to be hoped that now the Board can give its time to consideration of its proper functions undisturbed by petty bickerings and irrelevant quarrels.

THE NEW APPOINTEE.

The appointment of Dr. Joseph M. Bennett, Providence, to succeed Dr. William L. Harris as a member of the State Board of Health, will be received with satisfaction by all who are interested in the welfare of the Board. The endorsement of Dr. Bennett by the large number of physicians who protested Dr. Harris's reappointment is an expression of their confidence in his professional ability and personal integrity—factors which will make Dr. Bennett a valuable addition to the State Board of Health. The JOURNAL extends heartiest congratulations to Dr. Bennett upon his appointment.

LESSONS OF THE HALIFAX DISASTER.

If plans now under consideration in this city are perfected, the lessons of the Halifax disaster will not be lost upon this community. Two facts stand out prominently in connection with such a calamity: (1) The lack of an organization especially conceived to handle any great emergency involving tremendous destruction of lives and property; (2) the lack of adequate supplies of all kinds. Nearly a year ago a plan was developed by a Providence physician, and supported by the National Security League, to establish in this city a medical relief organization which would be prepared to handle an overwhelming disaster such as has recently visited Halifax. Under this plan, Providence was tentatively divided into districts according to the police precincts, and two physicians were assigned to each precinct ready to answer any call of this nature. These physicians appointed assistants on whom they could call for aid at such a time. Surgical supplies and a few simple drugs were placed in the station houses to be ready when needed. These supplies had remained at the station houses until removed on the eve of the departure of the Red Cross Unit for Halifax. The large department stores were canvassed and a list was made of available cots, mattresses, blankets, sheets and towels which each store could be depended upon to supply at an instant's notice. The number of buildings which could be turned into emergency hospitals was compiled, and the local hospitals were asked to state how many patients they could accommodate in an emergency. A motor corps was organized, available railroad transportation for food and other supplies was ascertained, and the cooperation of the police commissioners and city officials obtained.

It is now proposed to incorporate this admirable plan into an effective working organization. It would seem that the Red Cross, through its Civilian Relief Committee, is the proper agency to formulate this plan and carry out this work. The state and city officials should be component parts of the organization. The local Red Cross rooms would be the logical headquarters for this emergency organization. The people naturally look to this body to assume charge of all relief work of this nature. Organization under these auspices could be speedily and effectively accomplished. A responsible head, who had been carefully selected in advance for the position, would at once take command of the situation. He would have well-trained lieutenants under him. All committees would report to him, and would receive orders from him. In this way, early organization, which is so vital to the adequate solution of the problem, would be quickly brought about.

Another phase of this problem, which would naturally come up for consideration in this

connection, is the question of a mobile or portable unit, which could be quickly transported to a neighboring city in case of disaster. This unit should consist of a small medical and surgical staff, with alternates, carefully selected for their special or general qualifications, who could be ready to move on short notice on such a relief expedition. Medical and surgical supplies for this mobile unit should be complete in character but not necessarily large in amount. They should be stored in some easily accessible place, where they could be despatched with the unit at any time. No men should belong to this unit who are already in the service of the country or who are likely to enlist in the Medical Reserve Corps.

Publicity should be given to this plan, so that the public may know what to expect in case of any great disaster. The idea is fruitful of great results, and is being carefully worked out by a committee of physicians of the Council of National Defense in conjunction with state and city officials and representatives of other organizations.

THE LABORATORY IN WAR.

Of all the measures designed to protect the soldiers of our army in their struggle against the enemies of civilization, none are more important than those which are employed to detect and check the advance of that other hostile host who fear neither bayonet nor barrage and whose stealthy progress no aerial observer can decry and no curtain of fire can halt. The bacteria of disease are to be defeated by methods no less highly specialized than are the other procedures of modern warfare, methods many of which have been modified and improved since the beginning of the present war and which demand a very perfect organization and technical training on the part of the Medical Corps and a very elaborate equipment. In this work the early recognition of cases of infectious diseases, such as epidemic meningitis and typhoid, with the identification and isolation of carriers, is perhaps the most important single task which is performed by the medical arm of the service. In doing it the bulk of the work must be carried on by men expert in bacteriology and serology working in completely equipped laboratories.

The list of diseases especially dangerous to troops and the diagnosis of which rests upon laboratory findings is a long one and includes epidemic meningitis, diphtheria, typhoid, dysentery, cholera, tuberculosis, gonorrhoea, syphilis and many others. However, the diagnosis of fully developed cases of these diseases is but a small part of the work of the laboratory. The identification of carriers is an equally important matter, for in case of many infections the prevention of an epidemic may depend upon the effective isolation of all persons harboring the organism. This phase of the work is ordinarily much the more difficult, demands as a rule far greater skill and experience on the part of the bacteriologist, and is usually a very laborious procedure. In the case of epidemic meningitis, for example, the identification of the organism in the cerebrospinal fluid of a person suffering from the disease, is a relatively simple matter, but the discovery of the carrier is an extremely difficult one. In the one case the organism is almost always in pure culture in the spinal fluid and can be stained directly. In the other it must be obtained uncontaminated by saliva from the roof of the nasopharynx by means of a sterile swab enclosed in a curved glass tube known as the "West tube;" it must be cultivated in plates of special culture media; the colonies must be carefully differentiated and "fished," and the resulting growths identified by agglutination by an immune serum. Hundreds of individuals may have to be examined in this manner before all the carriers in a given camp are found. The practitioner who is not in touch with military matters will be surprised when he learns the importance of epidemic meningitis in the present war, the havoc that it has wrought in certain of the allied forces and the extent to which the procedures just suggested are being employed in the protection of the troops at the present time.

Besides the diagnosis of infectious diseases and the identification of carriers, the laboratory has several other important functions to perform. In the field of surgery the study of wound infection is now carried on in a much more detailed and careful manner since the work of Carrel has become generally appreciated. Not only the type of infecting organ-

isms, but also the amount of degree of infection of septic wounds is investigated. Furthermore, the preparation and application of bacterial vaccines and sometimes the application of the various sera, as well as routine clinical examinations of urine, blood and feces, falls within the scope of the duties of the laboratory staff. Every facility has been provided for the carrying out of this vast amount of work. The base hospital laboratories and the division laboratories are supplied with all the necessary equipment and each is manned by a staff of experts who have been trained in the newer methods.

SOCIETIES

RHODE ISLAND MEDICAL SOCIETY.

Quarterly Meeting.

Medical Library, Dec. 6, 1917.

The meeting was called to order by the President, Dr. John Champlin, at 4 p. m.

The minutes of the September meeting and of the last meeting of the House of Delegates, at which the annual dues were increased to $10, were read and approved.

The following appointments were made by the President:

Anniversary Chairman—Dr. F. T. Rogers.

Trustee of the Rhode Island Medical Society Building—Dr. C. Grant Savage.

Delegates to State Societies: Maine—Dr. J. C. Rutherford, Dr. H. W. Kimball.

New Hampshire—Henry K. Gardiner, H. G. Partridge.

Vermont—Joseph M. Bennett, Elisha D. Clarke.

Massachusetts—Arthur T. Jones, Jesse E. Mowry.

Connecticut—F. C. Pagan, John L. May.

Program:

Paper: "Anterior Poliomyelitis, the Pathology, Indications and Treatment in the Early and Subacute Stages," Dr. William Benham Snow. Director of Physical Treatment of Poliomyelitis at Bellevue Hospital Clinic, New York.

Paper: "The Treatment of Poliomyelitis," Dr. Frank E. Peckham, Providence.

Report of meeting of the American College of Surgeons, "The Classifications of Hospitals," Dr. J. W. Keefe, Providence.

Report of meeting of State Committees, Medical Section of the Council of National Defense, Dr. A. T. Jones, Providence.

Adjourned. Collation.

J. W. Leech, M. D., *Secretary.*

Section in Medicine.

A meeting of the Section in Medicine of the Rhode Island Medical Society was held at the Medical Library, January 22, 1918, at 8:45 p. m.

Paper: "Blood Pressure," by Dr. Stephen A. Welch.

Creighton W. Skelton, M. D.,
Secretary-Treasurer.

DISTRICT SOCIETIES

Providence Medical Association.

The annual meeting of the Providence Medical Association was held at the Medical Library on January 7, 1917. The meeting was called to order by the Vice-President, Dr. William F. Flanagan, at 8:55 p. m. Dr. Flanagan announced the death of our President, Dr. F. E. Burdick, on December 26, 1917, and appointed Dr. H. G. Partridge and Dr. P. Williams a committee to draw up a memorial on the death of Dr. Burdick. There were present at the meeting 104 members and 42 guests. The records of the preceding meeting were read and approved.

The annual report of the Secretary, showing a total membership of 313 members, was read, received and ordered placed on file.

The annual report of the Treasurer, showing a balance on hand of $649.15, was read, received and ordered placed on file.

The annual report of the Standing Committee was read by the Secretary, received and ordered placed on file.

The annual report of the Reading Room Committee was read by the Chairman, Dr. George S. Mathews, received and ordered placed on file.

An outline of the President's annual address, which was found in Dr. Burdick's desk after his death, was read by Dr. H. G. Partridge.

The next order of business was the election of officers and committees for the ensuing year.

The Secretary was asked to preside, the by-laws were suspended and the Secretary instructed to cast one ballot for Dr. William F. Flanagan for President. Dr. Flanagan was declared elected and in a few well chosen words resumed charge of the meeting.

The by-laws were again suspended and the

Secretary was instructed to cast one ballot for the remaining officers and committees on the ticket. The following named officers and committees were thereupon declared elected:

Vice-President—Harry W. Kimball, M. D.

Secretary—Charles O. Cooke, M. D.

Treasurer—Winthrop A. Risk, M. D.

Member of Standing Committee for five years —P. Williams, M. D.

Trustee of the Rhode Island Medical Library Building for one year—Henry C. Hall, M. D.

Reading Room Committee — George S. Mathews, M. D., Frank T. Fulton, M. D., M. B. Milan, M. D.

Delegates to the House of Delegates of Rhode Island Medical Society—J. E. Mowry, M. D., Henry J. Hoye, M. D., D. L. Richardson, M. D., P. Williams, M. D., A. D. Rose, M. D., George R. Barden, M. D., W. H. Magill, M. D., E. S. Brackett, M. D., William Hindle, M. D., Albert H. Miller, M. D., Walter G. Sullivan, M. D., Frederic N. Brown, M. D., Harold G. Calder, M. D., Harry C. Messinger, M. D., Robert C. Robinson, M. D.

Appointment of committees by the President was deferred.

The application for membership of Dr. F. O. Balcom was read and referred to the Standing Committee.

Dr. Henry B. Moor and Dr. John H. Morrissey, having been approved by the Standing Committee, were elected members of the Association.

A resolution relative to the Single Tax, introduced by Dr. L. F. C. Garvin and seconded by Dr. Leonard, was referred to the Standing Committee with power to act.

On motion of Dr. W. A. Risk, duly seconded, it was voted the annual dues for the year 1918 be four dollars.

Dr. John W. Keefe presented a patient with stenosis of the esophagus and demonstrated the passage of an olive tipped bougie into the patient's stomach by means of a thread as a guide, which the patient had previously swallowed. He showed the X-ray films demonstrating the stricture near the cardiac end of the stomach.

Dr. Roland Hammond presented a patient who had suffered fractures of six long bones and also exhibited the X-ray plates of these fractures.

The paper of the evening, entitled "Experiences in Halifax," was read informally by Dr. N. Darrell Harvey. Dr. Harvey's talk was enthusiastically received.

Dr. G. de N. Hough of New Bedford, Mass., who was in charge of the Rhode Island unit in Halifax, supplemented Dr. Harvey's talk and paid a glowing tribute to the personnel of the Rhode Island unit.

The meeting adjourned at 11:05 p. m. A collation was served.

CHARLES O. COOKE, *Secretary.*

ANNUAL REPORT OF THE SECRETARY OF THE PROVIDENCE MEDICAL ASSOCIATION FOR THE YEAR 1917.

At the last annual meeting there were 298 . embers and two honorary members. During the year there have been elected 17 new members, viz.: Samuel Starr, Richard F. McCoart, John F. Kenney, James J. Baron, Lewis J. Frink, Carl R. Gross, Paul Appleton, Joseph W. Bannan, William P. Buffum, Jr., Louis J. Cella, William A. Mulvey, William F. Duffy, Frederick H. Devere, J. Edward McCabe, Jeannie O. Arnold, Mary E. Gaffney, and James P. McKenna. Three members have died, viz.: Dr. F. E. Burdick, Dr. Henry W. Burnett, and Dr. A. E. Ham. One member has been dropped for non-payment of dues. The total membership at present is as follows: 311 members and 2 honorary members.

During the year 1917, nine meetings of the association were held. The average attendance was 64 members and 3 guests. The average attendance in 1916 was 71 members and 4 guests. In other words, the attendance in 1917 averaged 7 members and 1 guest less than in 1916. The largest attendance at any meeting in 1917 was in December, when there were present 74 members and 11 guests.

Eleven papers have been presented by members, viz.: H. G. Partridge, William R. White, John W. Keefe, George A. Matteson, L. C. Kingman, C. V. Chapin, H. S. Bernstein, E. W. Burt, Charles O. Cooke, Charles A. McDonald and W. L. Chapman. Two papers have been presented by guests, Dr. James B. Ayer and Dr. William H. Smith, both of Boston, Mass. In the year 1916 fourteen papers were presented by members and three papers by guests.

During the year 1917, 49 members have taken part in the discussion of papers. This is a decided improvement over 1916, when only 29 members took part in the discussion of papers.

Aside from the reading of papers, cases have been reported by one member and specimens shown by one member. In 1916, cases were reported by two members and specimens were shown by three members.

At the June meeting, memorials were read on the deaths of Dr. A. E. Ham and Dr. H. W. Burnett.

At the November meeting, the sum of three hundred dollars was appropriated to the Rhode Island Medical Society for the use of the Medical Library for the year 1917.

At the December meeting, it was voted that members of the association in active service of the United States be excused from annual dues beginning January 1, 1918.

This report would be incomplete without referring to the members who have responded promptly and cheerfully to the call of our country for service in this great war for humanity.

The following named members are in active service of the United States Government:

Herbert H. Armington,	Harmon P. B. Jordan,
Francis H. Beckett,	John W. Keefe,
Frederick L. Blair,	Jacob S. Kelley,
Bertram H. Buxton,	George A. Matteson,
Peter P. Chase,	Marcius H. Merchant,
Anthony Corvese,	William A. Mulvey,
Murray S. Danforth,	Ira H. Noyes,
Carl R. Doten,	Walter J. O'Keefe,
George W. Gardner,	Arthur H. Ruggles,
A. Arlington Fisher,	Thomas F. Scanlon,
J. Leroy Fisher,	John W. Sweeney,
Theodore C. Hascall,	George W. Van Benschoten,
James Hamilton,	Roswell S. Wilcox.

Drs. Paul Appleton and Jay Perkins have been in service, but are now relieved.

Dr. Fred E. Webb is in service of the Canadian Government.

Twelve members are awaiting call for service with the Rhode Island Hospital Unit (Navy Base Hospital No. 4).

Many other members have received or are awaiting commissions in the Medical Reserve Corps and expect soon to be called for service.

It seems a safe prediction that in the next few months at least one quarter of the membership of this association will be in active service of the United States Government.

Respectfully submitted,

CHARLES O. COOKE, *Secretary.*

ANNUAL REPORT OF THE STANDING COMMITTEE FOR THE YEAR 1917.

The Standing Committee has held six meetings during the year 1917.

Eighteen applications for membership have been approved.

CHARLES O. COOKE, *Secretary.*

ANNUAL REPORT OF THE TREASURER OF THE PROVIDENCE MEDICAL ASSOCIATION FOR THE YEAR 1917.

Receipts.

Balance on hand January 1, 1917.....	$364.30
By 291 Dues at $4.00.....	1,164.00
Interest on Call Account.....	10.84
	$1,539.14

Expenses.

Donation R. I. Medical Society.....	$300.00
Collations	285.68
Journals	187.35
Printing and Postage	116.96
	$889.99
Receipts	$1,539.14
Expenses	889.99
	$649.15
Balance on hand January 1, 1918.....	$649.15

W. A. RISK, *Treasurer.*

Examined and found correct.
January 7, 1918.
For the Standing Committee,
CHARLES O. COOKE, *Secretary.*

WASHINGTON COUNTY MEDICAL SOCIETY.

The Annual Meeting of the Washington County Medical Society was held at the Colonial Club, Westerly, January 10, 1918, at 11 a. m.

The report of the Treasurer showed the society to be in a healthy condition financially—all bills paid and a balance on deposit.

A committee of three was appointed to look into the matter of lodge and contract work and report at the next meeting.

Officers for the ensuing year were elected as follows:

President—A. B. Briggs, Ashaway.

First Vice President—P. J. Manning, Wickford.

Second Vice President—H. L. Johnson, Westerly.

Secretary and Treasurer—W. A. Hillard, Westerly.

Auditor—S. C. Webster, Westerly.

Censor for Three Years—R. R. Robinson, Wakefield.

Delegate to the Rhode Island Medical Society for Two Years—H. K. Gardiner, Wakefield.

Councilor to the Rhode Island Medical Society for Two Years—F. I. Payne, Westerly.

Isaac Gerber, M. D., of Providence, addressed the meeting on "Some Aspects of Modern X-ray Treatment," following which a vote of thanks was extended.

Dr. Champlin, representing the State Council of National Defense, called attention to the need of more medical men in the Government service.

Dinner at the club followed adjournment.

Members in good standing, January 10, 1918, twenty-six.

W. A. HILLARD, *Secretary.*

HOSPITALS

RHODE ISLAND HOSPITAL.

At the annual examination for internes, held December 8, 1917, the following appointments were made:

Dr. Alfred McAlpine, to fill a vacancy January 1, 1918.

Dr. Edward McLoughlin, to fill a vacancy April 1, 1918.

Drs. Fred. S. Thorne and Daniel Morrissey, service beginning July 1, 1918.

Dr. Lester Cleland, service beginning October 1, 1918.

Dr. Elihu Wing, who graduated January 1, 1918, is filling an appointment at the Providence Lying-In Hospital.

Dr. Harry H. Brown, Jr., who graduated January 1, 1918, has been called for duty to Camp Greenleaf, Fort Oglethorpe, Ga. He is commissioned First Lieutenant, M. R. C. Drs. Kenneth Churchill and Anderson have received similar commissions and have been called to the same place for duty.

All the members of the Rhode Island Unit to Halifax have returned.

The quarterly meeting of the Staff Association was held at the hospital on January 14, 1918. At the request of the Trustees of the hospital, a joint committee has been appointed, consisting of two members of the Board of Trustees, and the President, ex-officio, and a member from each of the Consulting, Visiting and O. P. D. Staffs. Dr. John W. Mitchell has been elected to represent the Consulting Staff, and at a meeting of the Staff Association, held at the hospital January 21, 1918, Dr. Frank T. Fulton was elected to represent the Visiting Staff, and Dr. Nat H. Gifford was elected to represent the O. P. D. Staff. This joint committee will discuss matters of hospital policy.

PROVIDENCE CITY HOSPITAL.

Dr. C. F. Thomson began a service as interne on December 1, 1917. Dr. S. J. Dalton began a similar service on January 1, 1918.

Dr. E. A. Barrows has finished his internship and entered the Rhode Island Hospital on January 1, 1918.

Mr. C. A. Lathrop, bacteriologist to the hospital, has enlisted in the Navy and will be attached to Base Hospital No. 4.

ST. JOSEPH'S HOSPITAL.

An associate staff has been organized, to consist of a group of physicians who are allowed to do private work in the wards of the hospital. These men will be appointed after having made application to the hospital for such appointment in a particular department, and their work will be restricted to that department.

Dr. W. L. Chapman has been appointed to the Consulting Staff. His place as surgeon has been filled by the appointment of Dr. George R. Barden. Dr. J. E. McCabe has been made assistant surgeon to fill the place of Dr. Barden.

The following changes in the Out Patient Staff have been made: Dr. Gordon to be chief of the Surgical Department, Dr. Papavasiliou appointed to the Medical, Dr. Collins to the Children's and Dr. H. B. Moor to the Gynecological Departments.

Dr. Charles Collins and Dr. S. G. Lenzner have entered active service in the Medical Reserve Corps. Dr. Balliotti has recently received a commission as Lieutenant, M. R. C., and is awaiting orders.

A dinner of the St. Joseph's Hospital Staff Association was held January 16, 1918, at 7:30 p. m., at the rooms of the Catholic Club, Jackson street. About forty-five members and guests were present. The President of the Staff Association, Dr. Andrew J. McLaughlin, acted as toastmaster. Speeches were made by Rev. Peter E. Blessing, D. D., Secretary of the hospital corporation, on "The Relation of the Hospital to the Community"; by Thomas F. Cooney, Esq., on "The Relation of the Medical Profession to the Community," and by Maj. John W. Keefe, on "The Medical Profession of Rhode Island and the War."